

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (currently amended) A communication system ~~which comprises a~~ configured to ~~communicate with a~~ mobile station operable in accordance with a predetermined mobile communication protocol and ~~an internet protocol (IP)~~ ~~a~~ terminal operable in accordance with an Internet protocol (IP), the predetermined mobile communication protocol ~~allowing~~ configured to ~~allow use of~~ a plurality of radio links between the mobile station and the ~~IP-terminal~~ communication system, ~~the mobile station being communicable with the IP terminal~~, the communication system comprising:

an interworking apparatus ~~which is operable in response to an~~ configured to receive IP frame frames defined by the IP and a plurality of radio frames defined by the predetermined mobile communication protocol, the interworking apparatus comprising:

framing means for framing each IP frame into a point-to-point protocol (PPP) frames frame defined by the PPP;

transmitting frame memory means ~~which are assigned to the~~ plurality of radio links~~[, respectively,]~~ for storing the PPP frames, wherein the transmitting frame memory means comprises a plurality of frame memories which are equal in number to a number of radio links assigned to the interworking apparatus one by one, respectively;

reception frame control means for assigning the PPP frames generated by the framing means to the plurality of frame memories; and

transmitting means for transmitting the stored PPP frames through the plurality of the radio links in the form of the radio frames, ~~respectively~~.

2. (currently amended) A communication system as claimed in claim 1, wherein the predetermined mobile communication protocol is a radio link protocol (RLP) type 2 ~~defined by the TIA/EIA/IS-707A~~; and wherein[[::]] the transmitting means comprises:

converting means for converting the PPP frames stored in the plurality of frame memories into a plurality of radio link protocol (RLP) frames defined by the RLP type 2; and
radio frame memory means which ~~are made to~~ correspond to the plurality of radio links, ~~respectively~~, for ~~individually~~ storing each of the RLP frames ~~to make the transmitting means transmit each RLP frame as each of the radio frames~~.

3. (currently amended) A communication system as claimed in claim 2, wherein the interworking apparatus further comprises:

receiving means for receiving ~~the~~ a plurality of the radio frames through the plurality of the radio links[[, respectively]]; and

reception frame memory means for ~~individually~~ storing the radio frames ~~at every one of the radio frames~~; and

reproducing converting means for reproducing converting the radio frames into corresponding PPP frames.

4. (currently amended) A communication system as claimed in claim 3, wherein the interworking apparatus further comprises:

sending means for sending the PPP frames to the IP terminal after the PPP frames are converted into IP frames, ~~when the reproduced PPP frames are IP frames.~~

5. (currently amended) A communication system as claimed in claim 4, wherein the ~~transmitting frame memory means comprises:~~

~~a plurality of frame memories which are equal in number to the radio links assigned to the interworking apparatus;~~

the interworking apparatus further ~~comprising~~ comprises:

~~reception frame control means for assigning the PPP frames sent from the framing means to the respective frame memories; and~~

transmission frame control means for successively reading the radio frames out of the reception frame memory means.

6. (currently amended) A communication system as claimed in claim [[5]] 1, wherein the number of the plurality of the frame memories of the transmitting frame memory means is ~~changed with reference to~~ configured to change based on the number of the radio links assigned to the interworking apparatus.

7. (currently amended) An interworking apparatus located between a mobile station and an IP ~~a terminal so as to carry out mutual conversion between Digital cellular method and the IP protocol, the mobile station being operable in accordance with both the Digital cellular method and the IP protocol while the IP terminal is operable in accordance with the IP protocol, the interworking apparatus comprising:~~

an Internet protocol (IP) protocol interface for executing interface processing of the IP protocol to produce ~~configured to receive and transmit~~ IP frames;

a radio protocol interface for ~~executing interface processing of a radio protocol to produce~~ configured to receive and transmit radio frames;

a framing portion responsive to the IP frames, for framing the IP frames into point-to-point protocol (PPP) frames;

a reception frame control portion for assigning the respective IP frames ~~at every to one of a plurality of~~ radio links;

PPP frame memory means for individually storing the PPP frames ~~at every one of the radio links determined in number~~ under control of the reception frame control portion;

radio link protocol (RLP) converting means for converting the PPP frames stored in the PPP frame memories memory means into RLP frames equal in number to the PPP frames;

frame transmitting means ~~which are made to correspond~~ corresponding to the RLP converting means for transmitting the RLP frames through ~~the~~ a radio interface to a radio transmission path;

radio reception means for receiving, through the radio interface, RLP frames sent from the mobile station via radio links ~~determined in number~~;

RLP frame memory means, ~~the number of which is determined in accordance with the radio links,~~ for successively storing each of the RLP frames;

a transmission frame control portion for successively reading the RLP frames out of the RLP frame memory means; and

~~reproducing~~ converting means for ~~reproducing~~ converting the RLP frames read out of the RLP frame memory means into corresponding PPP frames[[,]] and converting to convert the PPP frames into the IP packets ~~on detection of the IP frame.~~

8. (original) An interworking apparatus as claimed in claim 7, the mobile station negotiating with the radio interface prior to communication with the interworking apparatus, in connection with the number of the radio links in a forward direction from the interworking apparatus to the mobile station and in a reverse direction from the mobile station to the interworking apparatus,

wherein the radio interface informs the reception frame control portion and the transmission frame control portion of the agreed number of the radio links obtained as a result of the negotiation;

the numbers of the PPP frame memory means and the RLP frame memory means being determined in response to the agreed number of the radio links.

9. (original) A mobile station comprising the interworking apparatus claimed in claim 8.

10. (currently amended) An interworking apparatus for use in carrying out conversion of
~~Digital cellular method and IP protocol so as to mutually connect facilitating communications~~
between a mobile station and an IP terminal, comprising:

an IP protocol interface ~~for carrying out IP protocol interface processing to produce~~
configured to receive and transmit IP packets;

~~an a~~ radio interface ~~for carrying out radio protocol interface processing~~ configured to receive
and transmit radio frames;

a framing portion responsive configured to the receive IP packets sent from the IP protocol
interface ~~for framing and frame~~ the IP packets into PPP frames;

a reception frame control portion for assigning the each PPP frames frame framed by the
framing portion ~~at every to~~ one of a plurality of radio links;

a plurality of PPP frame memories for storing the PPP frames sent from the framing portion,
~~at every one of the radio links~~;

a plurality of RLP converting portions, which correspond to the respective PPP frame
memories, for converting the PPP frames read out of the PPP frame memories into RLP frames,
respectively;

a plurality of frame transmission portions, which correspond to the respective RLP
converting ~~means~~ portions, for transmitting the RLP frames sent from the RLP converting ~~means~~
portions to radio transmission paths through the radio interface;

a plurality of frame reception portions, supplied with RLP frames sent through the radio
links, for distributing the RLP frames ~~at every one of radio links~~;

a plurality of RLP frame memories for successively storing the RLP frames sent from the frame reception portions;

a transmission frame control portion for successively reading the RLP frames out of the RLP frame memories; and

a reproducing portion for reproducing the RLP frames read out of the RLP frame memories into PPP frames to supply IP packets to the IP protocol interface by converting the PPP frames into ~~the~~ IP packets on detection of ~~the~~ IP protocol frames;

the reception frame control portion and the transmission frame control portion being given the numbers of ~~the~~ radio links which are determined in relation to a forward direction from the interworking apparatus to the mobile station and a reverse direction from the mobile station to the interworking apparatus; wherein

the reception and the transmission frame control portions ~~varying~~ vary available numbers of the PPP frame memories and the RLP frame memories with reference to the numbers of ~~the~~ radio links.

11. (original) An interworking apparatus as claimed in claim 10, wherein the transmission frame control portion processes frames read out of the RLP frame memories when the frames read out of the RLP frame memories are PPP link control frames.

12. (currently amended) A communication system for use in connecting a mobile station through an ~~interworking~~ apparatus to a ~~packet~~ terminal included in a connectionless network, the ~~interworking~~ apparatus comprising:

a first group of frame memories for storing corresponding to a plurality of radio links used to transmit data between the apparatus and the mobile station, the first group of frame memories being configured to store PPP frames produced from reception packets at every one of radio links;

means for reading the PPP frames a plurality of converters configured to read out of from the first group of the frame memories and to convert the PPP frames into radio frames and to produce the radio frames through the radio links, respectively;

a second group of frame memories for storing radio frames sent through received from the mobile station via radio links at every one of the radio frames; and

a reproducing means for reproducing device configured to convert the radio frames read out of from the second group of the frame memories into PPP frames.

13. (currently amended) A method of establishing a connection between a mobile station and a terminal of a connectionless network through an ~~interworking~~ apparatus, comprising ~~the steps of:~~ providing multiplexed radio links between the mobile station and the ~~interworking~~ apparatus;

successively storing radio frames sent through the radio links in these radio link protocol (RLP) frame memories of the ~~interworking~~ apparatus, wherein the number of the RLP frame memories correspond which are determined for every one of the to a number of radio links between the mobile station and the apparatus;

successively reproducing converting the radio frames into PPP frames; and
delivering PPP frames sent from the terminal to PPP frame memories, wherein the number
of PPP frame memories correspond located at every one of the to the number of radio links between
the apparatus and the mobile station; and
to convert converting the PPP frames into radio frames and to produce the radio frames for
transmission through the radio links, respectively.

14-15. (canceled).